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AMENDMENTS

Please amend the claims as follows:

1. (previously presented) A method for adaptive ultrasound imaging, the method comprising:

(a) obtaining data from a plurality of transducer elements across a receive aperture;

(b) determining a coherence factor as a function of the data across the receive aperture; and

(c) setting a beamforming parameter as a function of the coherence factor.

2. (original) The method of Claim 1 wherein (b) comprises calculating a ratio of coherent sum to an incoherent sum.

3. (original) The method of Claim 1 wherein (b) comprises calculating phase variance across transducer elements.

4. (currently amended) The method of Claim 1 wherein (b) comprises calculating the coherence factor as a function of data altered by beamforming delays prior to ~~summation~~ <u>summing the data for beamforming</u>.

5. (original) The method of Claim 1 wherein (c) comprises setting a transmit beamforming parameter; and

further comprising:

(d) transmitting acoustic energy as a function of the transmit beamforming parameter.

6. (original) The method of Claim 1 wherein (c) comprises setting a receive beamforming parameter; and

further comprising:

(d) receiving acoustic energy as a function of the receiver beamforming parameter.

7. (original) The method of Claim 1 wherein (c) comprises setting an aperture size as a function of the coherence factor.

8. (original) The method of Claim 7 wherein (c) comprises setting a sub-aperture size.

9. (original) The method of Claim 1 wherein (c) comprises setting an apodization profile as a function of the coherence factor.

10. (original) The method of Claim 1 wherein (c) comprises setting one of a delay and phase profile as a function of the coherence factor.

11. (original) The method of Claim 1 further comprising:

(d) setting an image forming parameter as a function of the coherence factor.

12. (original) The method of Claim 1 wherein (c) comprises setting a complex aperture parameter as at least two of: apodization profile, aperture size, delay profile, and phase profile.

13. (previously presented) A system for adaptive ultrasound imaging, the system comprising:

a transducer having a plurality of elements in an array;

a processor operable to determine a coherence factor across the array as a function of data from the elements; and

a beamformer connected with the transducer, a beamforming parameter of the beamformer responsive to the coherence factor.

14. (original) The system of Claim 13 wherein the beamformer comprises one of a transmit beamformer, a receive beamformer and combinations thereof.

15. (currently amended) The system of Claim 13 wherein the beamforming parameter comprises ~~one of:~~ an aperture, an apodization profile, a delay profile, a phase profile ~~and~~ or combinations thereof.

16. (previously presented) A method for adaptive ultrasound imaging, the method comprising:

(a) obtaining data from a plurality of transducer elements;

(b) determining a coherence factor as a function of the data; and

(c) setting an image forming parameter as a function of the coherence factor, the image forming parameter being for synthesis, multibeam, a number of sequential beams, a number of sub-apertures, a number of focal zones, or combinations thereof.

17. (previously presented) The method of Claim 16 wherein (c) comprises setting a parameter for synthesis.

18. (original) The method of Claim 16 wherein (b) comprises calculating a ratio of coherent sum to an incoherent sum.

19. (original) The method of Claim 16 wherein (b) comprises calculating phase variance across transducer elements.

20. (currently amended) The method of Claim 16 wherein (b) comprises calculating the coherence factor as a function of the data altered by beamforming delays prior to ~~summation~~ summing the data for beamforming.

21. (original) The method of Claim 16 wherein (c) comprises setting a number of simultaneous beams.

22. (original) The method of Claim 16 wherein (c) comprises setting a number of sequential beams.

23. (original) The method of Claim 16 wherein (c) comprises setting one of: a number of sub-apertures, a number of focal zones in a same scan line and combinations thereof.

24. (original) The method of Claim 16 wherein (c) comprises setting a number of beams compounded together.

25. (original) The method of Claim 16 wherein (c) comprises setting one of: transmit multibeam parameters, receive multibeam parameters and combinations thereof.

26. (original) The method of Claim 16 wherein (c) comprises setting a number of receive sub-apertures;

further comprising:

(d) coherently summing ultrasound data within each of the sub-apertures; and

(e) incoherently summing coherent sum outputs of at least two sub-apertures of (d).

27. (currently amended) A system for adaptive ultrasound imaging, the system comprising:

a transducer having a plurality of elements;

a coherence factor processor operable to determine a coherence factor as a function of ultrasound data from the elements; and

an image forming processor operable to form images as a function of the coherence factor;

wherein the image forming processor is operable to set one of: a number of simultaneous beams, a number of sequential beams, a number of sub-apertures, a number of focal zones in a same scan line, a number of beams compounded together, transmit multibeam parameters, receive multibeam parameters and combinations thereof.

28. (original) The system of Claim 27 wherein the image forming processor comprises a compound processor.

29. (cancelled)

30. (previously presented) A method for adaptive ultrasound imaging, the method comprising:

(a) obtaining ultrasound data from a plurality of transducer elements;

(b) determining a coherence factor as a function of the ultrasound data; and

(c) setting a dynamic range, a nonlinear filter, a nonlinear map, or combinations thereof as a function of the coherence factor.

31. (original) The method of Claim 30 wherein (c) comprises setting the dynamic range as a function of the coherence factor.

32. (original) The method of Claim 30 wherein (c) comprises setting the nonlinear filter as a function of the coherence factor.

33. (original) The method of Claim 30 wherein (c) comprises setting the nonlinear map as a function of the coherence factor.

34. (previously presented) A system for adaptive ultrasound imaging, the system comprising:

a transducer having a plurality of elements;

a coherence factor processor operable to determine a coherence factor as a function of ultrasound data from the elements; and

an image processor operable to set a dynamic range, a nonlinear filter, a nonlinear map, combinations thereof as a function of the coherence factor.